

APPLICATIONS

Demonstrating the Luna[®] Omega C18's Reproducibility, Scalability – HPLC to UHPLC – 1.6 μm , 3 μm , and 5 μm

Overview

The use of sub-2 μm particle technology and UHPLC equipment allows for the fast development of high performing methods, however the backward compatibility with low-pressure HPLC equipment is essential. This type of method portability allows for multiple workflows and system flexibility. The Luna Omega particle and phase was engineered to have scalable selectivity between the three different available particle sizes 1.6 μm , 3 μm , and 5 μm . In this application, a representative pharmaceutical QC system suitability standard mix was injected across the three available particle sizes at corresponding dimensions and on the same instrument. Three batches for each particle were compared to demonstrate reproducibility from batch-to-batch and column-to-column.

LC Conditions

Column: Luna Omega 1.6 μm C18
Luna Omega 3 μm C18
Luna Omega 5 μm C18

Dimension: 50 x 2.1 mm
150 x 4.6 mm
250 x 4.6 mm

Part No.: [00B-4742-AN](#)
[00F-4784-E0](#)
[00G-4785-E0](#)

Mobile Phase: A: Water with 0.1 % Formic Acid
B: Acetonitrile with 0.1 % Formic Acid

Gradient: See Chromatogram for Scaled Gradient

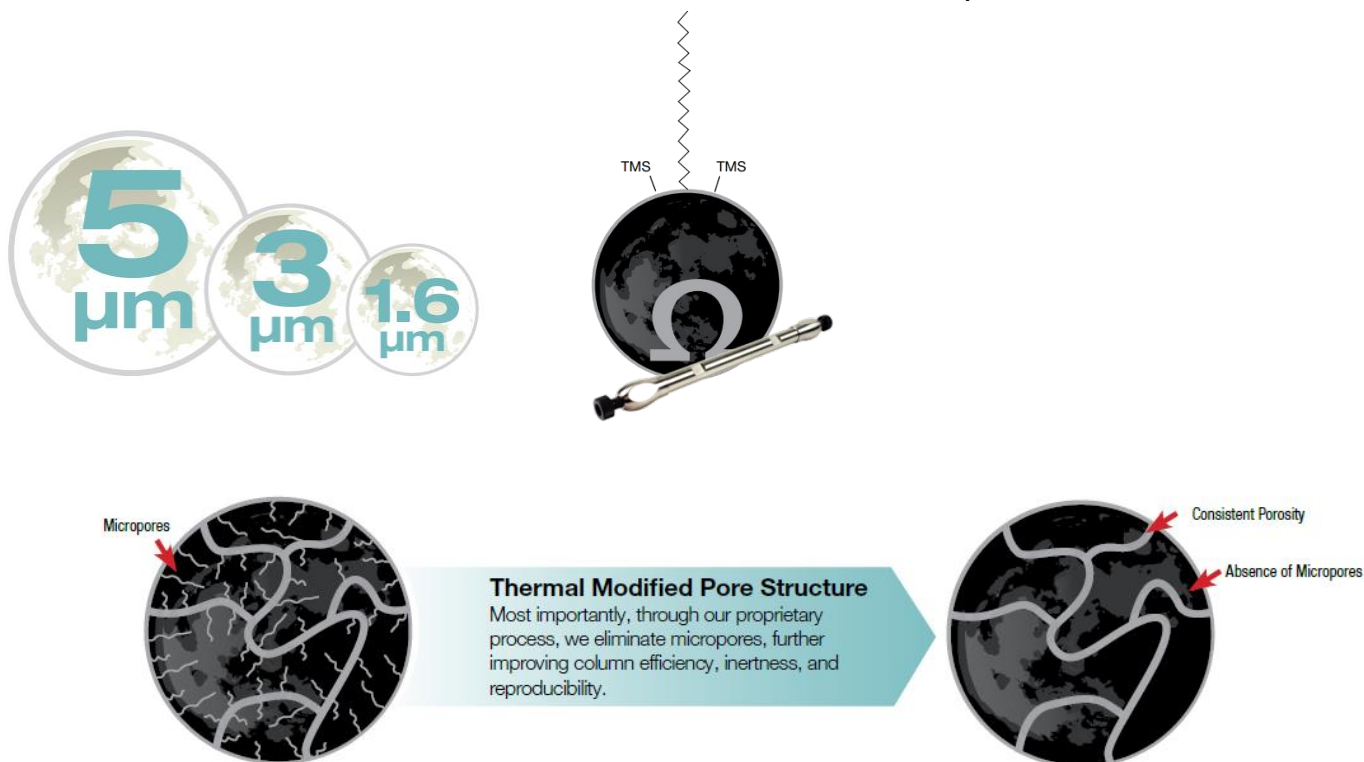
Flow Rate: See Chromatogram for Scaled Flow Rate

Temperature: 30 °C

Detector: UV @ 254 nm

Injection Volume: 1 μL or 5 μL of (5 mg/mL)

Sample: Chlorhexidine and Related Substances



Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

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Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
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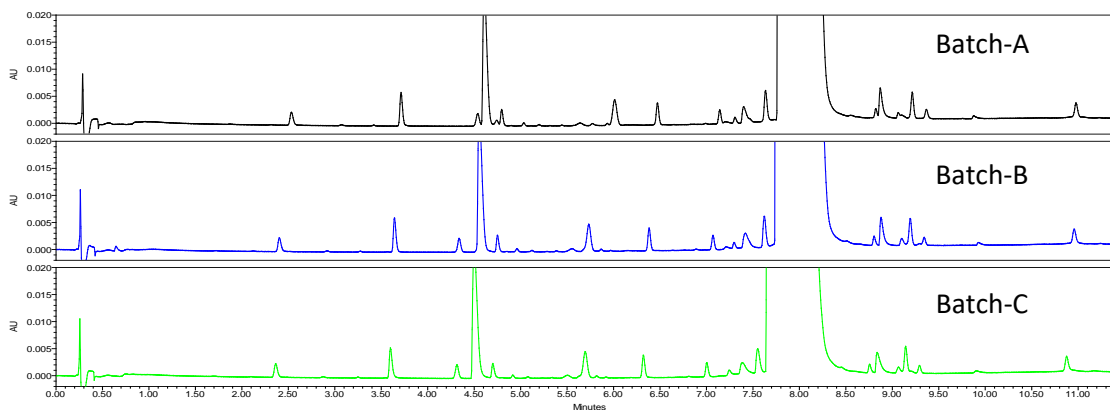
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Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
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Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16

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Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
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Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Overview

The representative standard was a complex mixture of chlorhexidine and related substances standard dissolved in water with 0.1 % formic acid. A 1 μL injection volume of 5 mg/mL standard solution was used in all examples. The instrument used was a Waters® ACQUITY® I-Class.

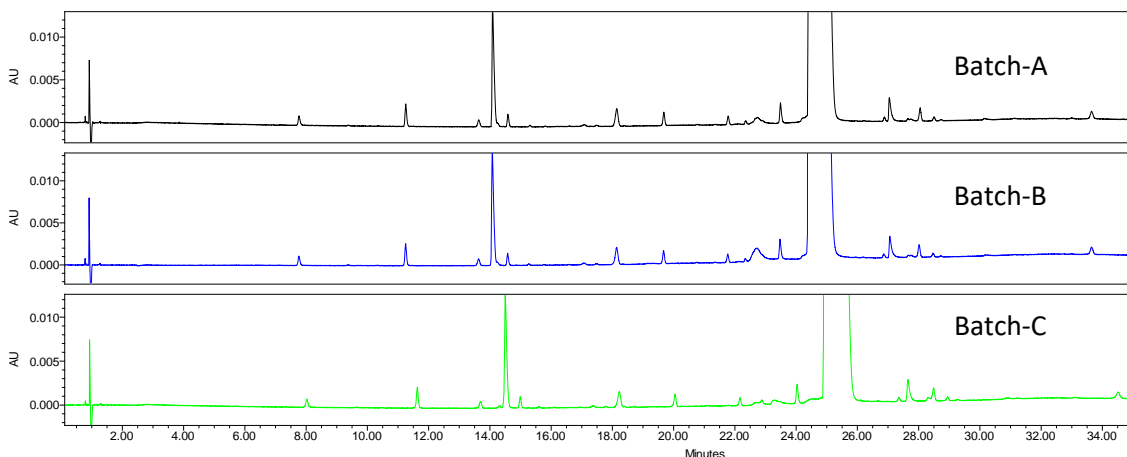


App ID 26092

Luna Omega 1.6 μm C18
50 x 2.1 mm

Time	B%
0	2
0.5	2
10.5	35
11.5	35
12	2
14	2

Injection Vol.: 1 μL
Flow Rate: 0.5 mL/min

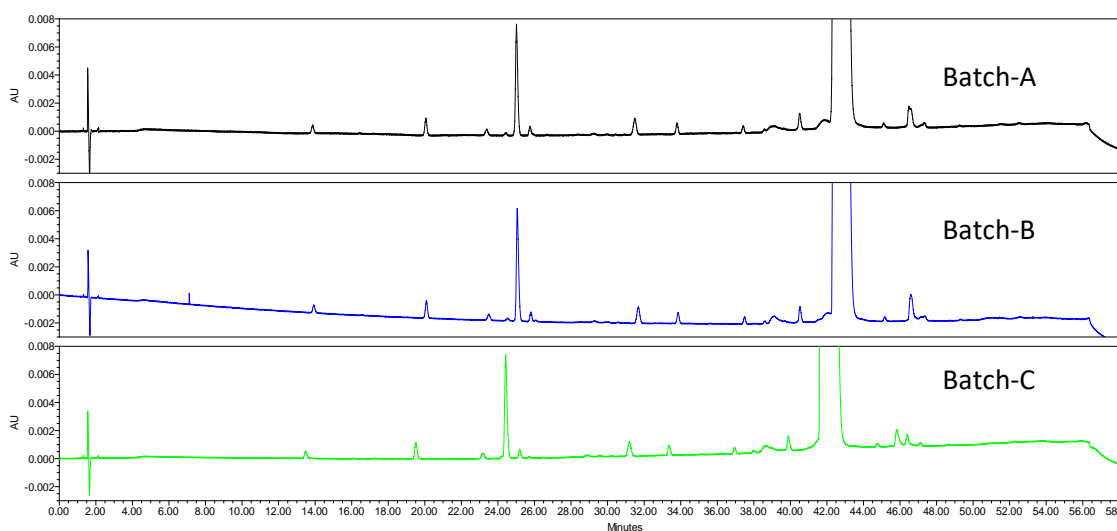


App ID 26080

Luna Omega 3 μm C18
150 x 4.6 mm

Time	B%
0	2
1.5	2
31.5	35
34.5	35
36	2
42	2

Injection Vol.: 5 μL
Flow Rate: 2.0 mL/min



App ID 26084

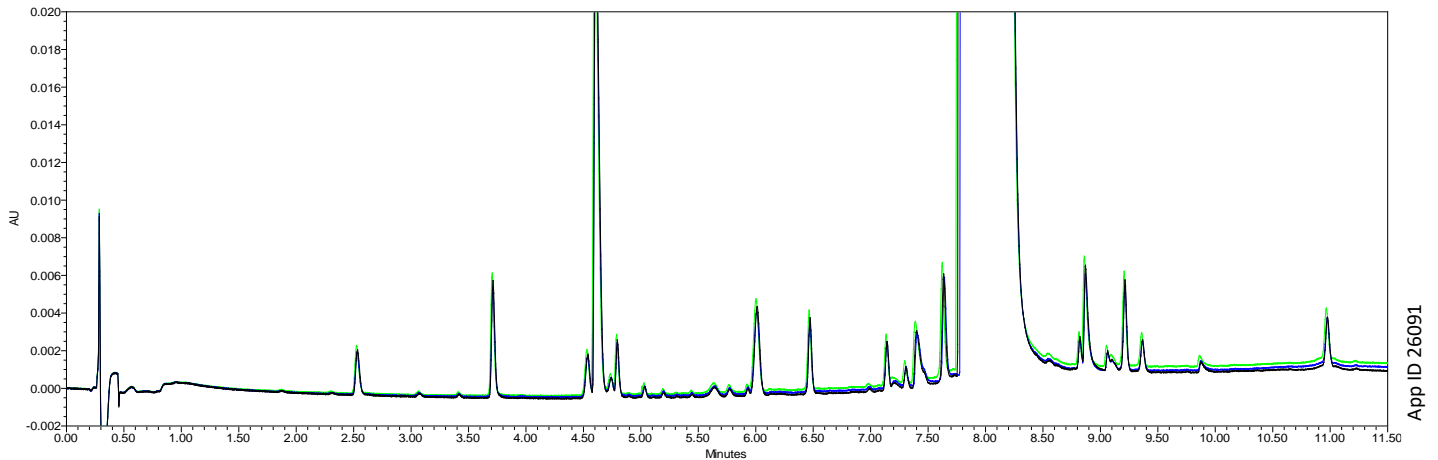
Luna Omega 5 μm C18
250 x 4.6 mm

Time	B%
0	2
2.5	2
52.5	35
55	35
57.5	2
62.5	2

Injection Vol.: 5 μL
Flow Rate: 2.5 mL/min



Three batch overlay on Luna Omega 1.6 μ m C18 – Chlorhexidine



Conclusion

Luna[®] is one of the most recognized HPLC brands on the market, delivering high efficiency, ruggedness, reproducibility, and dependability for a wide range of analyses. Luna Omega builds upon this legacy with an innovative yet rugged UHPLC and HPLC silica particle architecture, designed and manufactured by Phenomenex based on our unique applied knowledge, invention, and customer experience.

The Luna Omega C18 is a fully porous HPLC and UHPLC particle solution that can provide high performance on any system. Its particle portfolio is reproducibly scalable and was designed for method portability and flexible workflow to fit the analytical demands of the method no matter where the testing has to happen. In this example, a complex system suitability pharmaceutical standard was injected across three batches of each particle size available for Luna Omega C18 under HPLC and UHPLC conditions. The Luna Omega C18 is a great HPLC and UHPLC reproducible starting point with high-performance selectivity and portable particle size availability.

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